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## ABSTRACT

Abstracts, titles, and sources are given for documents concerning the Inwald Personality Inventory (IPI) and Inwald Survey 3 (IS3). The following titles are included: (1) "Five-Year Follow-Up Study of Departmental Terminations as Predicted by 16 Preemployment Psychological Indicators"; (2) "The Predictive Validity of Psychological Testing and Peer Evaluations in Law Enforcement Settings"; (3) "A Cross-Validation Study of Police Recruit Performance as Predicted by the IPI and MMPI"; (4) "Predicting the Performance of Government Security Personnel with the IPI & MMPI"; (5) "Use of the IPI and HPP/SQ for Predicting Trainee Performance in a Government Law Enforcement Agency"; (6) "New York State Pre-Employment Psychological Screening Program Longitudinal Validation Study"; (7) "Uncertainty Reduction in Retail and Public Safety/Private Security Screening"; (8) "IPI and MMPI Predictions of Counterproductive Job Behaviors by Racial Group"; (9) "Validation of Police Officer Recruit Candidates' Self-Reported Drug Use on the Inwald Personality Inventory"; (10) "Personality Characteristics of Police Officers Who Continue or Terminate Employment Within Eighteen Months of Hiring"; (11) "A Redundancy Analysis for the Inwald Personality Inventory and the MMPI"; (12) "The IPI and MMPI as Predictors of Academy Performance for Police Recruits"; (13) "Correction Officer Job Performance as Predicted by the IPI and MMPI. A Validation and Cross-Validation Study"; (14) "A Longitudinal Validation Study of Correction Officer Job Performance as Predicted by the IPI and MMPI"; (15) "Role of IPI and MMPI as Predictors of Correction Officer Job Performance by Race"; (16) "Seven-Year Follow-Up of Officer Terminations Predicted by Psychological Testing"; (17) "A Comparison of the Inwald Personality Inventory (IPI) Scores of Police Recruit Applicants With and Without a History of Psychiatric Disturbance"; (18) "Predicting the Performance of Private Security Personnel with the IS3 & HPP/SQ"; (19) "The Use of the MMPI and IPI in Police and Correctional Officer Selection"; (20) "Internal Consistency and Predictive Validity of the Inwald Personality Inventory"; (21) "IPI and HPP/SQ Predictions of Peer Ratings and Class Standing"; (22) "Role of a Personality Screening Measure To Identify On-Job Behavior Problems of Correction Officer Recruits"; and (23) "Personality and Performance Sex Differences of Law Enforcement Officer Recruits." (SLD)

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## **Five-Year Follow-Up Study of Departmental Terminations as Predicted by 16 Preemployment Psychological Indicators**

Robin E. Inwald

Published in: *Journal of Applied Psychology*, 1988, 73(4), 703-710.

This 5-year study followed 219 public safety officers who were hired in a 1-year period by a large urban public safety agency. Sixteen preemployment psychological predictors (including MMPI and IPI test scores alone, psychologists' interpretations of test scores, and interpretations of test scores and interviews) were used to predict which officers were subsequently terminated ( $n=28$ ). It was found that equations from tests identified the greatest number of terminated officers (68% to 75%) but also resulted in false predictions of termination for 28% to 36% of the hired officers. A combination predictor based on IPI scale scores and critical item endorsements identified 54% of the terminated officers and "sacrificed" 10.5% of the nonterminated group. The psychologists' ratings of tests and interviews were less effective than the predictors derived from test data alone.

## **The Predictive Validity of Psychological Testing and Peer Evaluations in Law Enforcement Settings**

Forrest Scogin, Joseph Schumacher,  
Kimberly Howland & John McGee

Presented at the American Psychological Association  
Convention (August 1989, New Orleans, LA)

A total of 82 trainees from the University of Alabama Law Enforcement Academy completed a battery of paper-and-pencil tests during the first week of academy training. The tests included the Minnesota Multiphasic Personality Inventory (MMPI), the Inwald Personality Inventory (IPI) and the Shipley Institute of Living Scale (Shipley). Peer evaluations, supervisor evaluations, and final exam scores were obtained after the completion of the seven week academy. One year following graduation from the academy, complete job performance evaluations were collected from the employing agencies of 62 of the trainees. Seven separate multiple regressions were conducted for the MMPI, the IPI and the Shipley. The authors summarized results by stating that "the most frequently used psychological test inventory, the MMPI, was not significantly predictive of job performance at one-year follow-up." On the other

hand, it was found that "the IPI is a much more predictive instrument than either the MMPI or Shipley" and that the IPI was "a relatively strong predictor of subsequent officer behaviors such as supervisor ratings, verbal reprimands and citizen's complaints". The authors concluded that "the relationship of psychological test data, especially the IPI, to subsequent job performance is robust".

## **A Cross-Validation Study of Police Recruit Performance as Predicted by the IPI and MMPI**

Elizabeth J. Shusman, Robin E. Inwald  
& Hilary F. Knatz

Published in: *Journal of Police Science and Administration*, 1987, 15(2), 162-168.

A total of 698 male urban police officer candidates completed the IPI and MMPI as part of their application process to the police academy. After a six-month training period, data for selected job performance criteria (including absence, lateness, derelictions, restricted duty, negative reports, positive reports, overall evaluations and final ratings) were obtained. In a validation study of all subsequently hired officers, the IPI alone produced consistently higher percentages of overall correct classifications than the MMPI alone. Average overall correct classifications for the IPI was 67.9%, while average overall correct classifications for the MMPI was 61.3%. In a cross-validation study, the IPI yielded higher overall correct classifications than the MMPI on most criteria. IPI overall predictions for the cross-validation sample were also higher on most criteria than the MMPI on the original validation sample. For most job performance criteria in both the validation and cross-validation studies, a combination of the two tests produced higher percentages of overall correct classifications than either test alone. The issue of "false positives" in psychological screening was also addressed.

## **Predicting the Performance of Government Security Personnel with the IPI & MMPI**

Robin E. Inwald & Albert L. Brockwell

Published in: *Journal of Personality Assessment*, 1991, 56(3), 522-535.

The Inwald Personality Inventory (IPI) and Minnesota Multiphasic Personality Inventory (MMPI) were administered to three-hundred seven newly hired government security personnel. After nine to twelve months on the job, each was rated by their immediate supervisor on a four-point scale of global performance ("exceptional", "satisfactory",

"unsatisfactory", or "very unsatisfactory"). Discriminant function analyses indicated that the IPI was superior to the MMPI in predicting later job performance, but the greatest prediction accuracy was found in discriminant functions based upon both tests together. However, the "costs" of falsely identifying candidates as "poor risks" and screening out those who would have been successful increased along with accuracy in predicting the true "risks". It was concluded that organizations must ultimately decide upon the degree to which they are willing to sacrifice candidates who may have been successful in order to screen out those who are unsuitable. The implications of psychological screening for organizational selection policy are discussed.

### **Use of the IPI and HPP/SQ for Predicting Trainee Performance in a Government Law Enforcement Agency**

Robin E. Inwald & Terence Patterson

*Presented at the Annual Meeting of the American  
Psychological Association (August, 1990, Boston, MA)*

A study was conducted in which 448 trainees from a government law enforcement agency were given the IPI and the HPP/SQ. The purpose of the study was to evaluate prediction accuracy of various test results. Four predictors, using discriminant function equations and critical items from the IPI and the HPP/SQ, were compared for their ability to identify individuals who would be "successes" or "failures" in the academy.

The "Successful" group, those who were not terminated for any reason, consisted of 342 people. A total of 52 individuals were terminated for behavioral difficulties not related to academic performance. Finally, a group termed "Academic Failures" (54 individuals) was terminated due to inability to meet academic standards in the training academy.

Means and standard deviations were computed for IPI and HPP/SQ scales for the three groups. Predictions based upon the four measures used (IPI, HPP/SQ, I & H, and I + C10) were computed as well. In a comparison of the "Behavioral Successes" (independent of academic performance) and the "Behavioral Failures", the most accurate prediction was from the I + C10 predictor. It correctly predicted 78.2% as to whether or not they would succeed or fail, while the IPI predicted 66.2%, the HPP/SQ predicted 63.6%, and the I & H correctly predicted 69.6%. In the same comparison, the I & H equations predicted more of those individuals who would be "unsuccessful" than any other predictor used. It correctly indicated 71.2% of those who would be "unsuccessful". Use of this I & H predictor would cut the termination rate in half (from a rate of 11.6% to a rate

of 5.2%). This may represent a substantial improvement for some organizations. However, it must be noted that this correct prediction was also at a "cost" of 30.6% (i.e. 30.6% would be screened out unnecessarily if this predictor was used as an absolute "cut-point" in making hiring decisions).

### **New York State Pre-Employment Psychological Screening Program Longitudinal Validation Study**

Malin, Sharon Zouck, Luria, Jeffrey,  
& Morgenbesser, Leonard I.

*Presented at the Annual Meeting of the American  
Psychological Association (August 1987, New York City, NY)*

This criterion-related validation study reports longitudinal findings of the New York State Department of Correctional Services' Psychological Screening Program. This program was mandated by legislation and assessed the psychological fitness of applicants for the position of Correction Officer.

The variables of exits (terminations, resignations), supervisory probationary ratings and time and attendance behavior were compared to pre-employment psychological ratings. The termination rate for the program sample of 2,449 cases was also compared with the base rate established for a second sample prior to psychological screening.

On the criterion of termination, the Inwald Personality Inventory (IPI) correctly classified more officers than did the Minnesota Multiphasic Personality Inventory (MMPI) alone (IPI - 77.1%, MMPI - 67.3%). A combination of the IPI and MMPI or the IPI, MMPI, and Correction Officer Interest Blank (COIB) yielded overall predictions that were higher than those of any test alone.

Results indicated that psychologically screened officers (using the IPI, MMPI, and COIB) had higher overall probationary ratings and fewer time and attendance problems. Cross-validation analyses indicated the differential predictive validity of the testing instruments for the various criterion measures such as counseling reports, AWOLS, absence occasions, latenesses under two hours, days of absence, and sick leave hours. The IPI alone correctly classified more officers on these six criterion measures than did the MMPI or COIB used alone. Further, a combination of the IPI and MMPI yielded predictions that were higher than those of either the IPI or MMPI alone.

## Uncertainty Reduction in Retail and Public Safety/Private Security Screening

Robin E. Inwald, Henry Hurwitz, Jr.  
& Judith C. Kaufman

Published in: *Forensic Reports*, 1987, 4(2), 171-212.

Two sets of research were examined with regard to how well they reduced the uncertainty, or entropy, associated with hiring unknown job candidates. Each set consisted of studies that predicted on-job performance. Study Set A was a review of available research regarding integrity/honesty testing in the retail field. Six analyses were evaluated, involving a total of 8,760 employees. Criteria used to determine "poor" or "exceptional" performance included theft, policy violations and dishonesty, gross misconduct, and employment status. Study Set B examined thirteen studies (212 analyses) using paper-and-pencil tests commonly employed in the public and private safety fields, involving 19,598 individuals. Criteria used to determine "poor" or "exceptional" performance included termination, absence, lateness, disciplinary interviews and overall supervisory ratings.

Seven predictive analyses were chosen where the IPI was used, where there were corresponding MMPI analyses using the same candidates and where the percentage of correct classifications of "poor" performers was highest. Means were computed separately for various predictive measures using these IPI analyses, their corresponding MMPI analyses and all integrity/honesty analyses. The mean incidence rate of target behavior ("poor" or "exceptional") was 20% for the seven selected IPI analyses, 22% for the corresponding MMPI analyses and 3% for the integrity/honesty analyses. Mean correct classifications of "poor" performance was highest for the selected IPI analyses (70%), 61% for the corresponding MMPI analyses and 62% for the integrity/honesty analyses. The mean misclassification rate of "satisfactory" performers was lowest for the selected IPI analyses (25%), 32% for the corresponding MMPI analyses and 44% for the integrity/honesty analyses. The mean overall rejection/acceptance rate was 35% for the seven IPI analyses, 40% for the corresponding MMPI analyses and 48% for the integrity/honesty analyses. Thus, the seven IPI analyses yielded the highest percentage of correct classifications of "poor" performance and the lowest misclassification rate of "satisfactory" performance.

It was concluded from the above results that, in varying degrees, employment tests do provide significant useful information, successfully reducing uncertainty. However, each test has its own associated "cost" that would require "failing" varying numbers of apparently successful employees. Results from the analyses presented may aid users in their evaluation of the utility of paper-and-pencil tests.

## IPI and MMPI Predictions of Counterproductive Job Behaviors by Racial Group

Hilary F. Knatz, Robin E. Inwald,  
Albert L. Brockwell & Linh N. Tran

In press: *Test Validity Yearbook*

Correctional officers hired by a large urban agency between 1980 and 1985 were administered the Inwald Personality Inventory (IPI) and Minnesota Multiphasic Personality Inventory (MMPI) before being appointed to the job. The 3,349 white, 3,391 black, and 1,547 hispanic male officers were subsequently evaluated on their job status and histories of absence, lateness, and disciplinary interviews. Discriminant function analyses were applied to the IPI and MMPI, alone and together, to assess any race differences in their prediction accuracy for each counterproductive job behavior measure. No significant bias in prediction accuracy was detected, though hispanic males tended to have the highest number of correct predictions. The implementation of prediction equations for these tests would have reduced negative job behaviors by as much as 13%. Analyses of the relative percentages of "good" performers rated incorrectly were also included.

## Validation of Police Officer Recruit Candidates' Self-Reported Drug Use on the Inwald Personality Inventory

Eric Ostrov

Presented at the American Psychological Association Meeting (1985, Los Angeles, CA)

The Chicago Police Department, as part of a pre-employment screening program, routinely administers the Inwald Personality Inventory (IPI) to candidates who have passed a civil service examination, an assessment center procedure and a physical fitness examination. Research on the IPI suggests that individuals reporting negative behavior in the areas of drug use, job difficulties and trouble with the law are poor risks for police work. In order to validate one of these areas, drug use, the police department conducted a study comparing candidates' endorsements on the IPI Drug Scale with the results of a urinalysis (testing for the presence of illicit drugs such as THC or cannabinoid metabolites, cocaine metabolites, barbiturates, opiates, etc.).

In 1985, two groups of approximately 200 of the department's candidates were screened using the IPI. In addition, each of these candidates was also asked to provide

urine specimens for analysis. Results were analyzed for each sample group separately in order to evaluate whether significant results from Sample One would be confirmed by Sample Two. In the first sample, 43 candidates had positive urinalysis results. In the second sample, 34 candidates had positive results.

For each sample, candidates with positive results were compared with a randomly selected group of the same number of candidates with a negative urinalysis. Statistical tests of significance were performed comparing candidates with positive and negative urinalysis results on their frequency of endorsements of Drug Scale items. Significant differences between these two groups occurred on three Drug Scale items for Sample One and on five Drug Scale items for Sample Two. These items related to both marijuana and hard drug/cocaine use.

Researchers concluded that the "results clearly show that the IPI Drug Scale items successfully distinguish between drug positive and drug negative recruit groups". They further stated that the "use of the IPI Drug Scale as a criterion for identifying police recruit candidates as psychologically unsuitable to be police officers is extremely useful".

### **Personality Characteristics of Police Officers Who Continue or Terminate Employment Within Eighteen Months of Hiring**

Los Angeles Police Department  
Behavioral Sciences Section (1986)

The Behavioral Science Services Section of the Los Angeles Police Department compared the predictive abilities of the Inwald Personality Inventory (IPI), the Minnesota Multiphasic Personality Inventory (MMPI) and the California Personality Inventory (CPI) as one aspect of a longitudinal study of police recruits. The MMPI was administered to candidates prior to hiring as part of a pre-employment screening program. The IPI and CPI were administered to the 334 recruits in this study during their first week in the academy.

Of the 334 hired officers, 42 officers left the training academy during the first six months. An additional 25 left the police field after 18 months. Analyses of variance were used to compare employed officers with officers who left the department at the two time periods. Significant differences were obtained for the IPI at both the 6 and 18 month intervals. At the 6 month interval, Duncan tests at the .05 level of significance showed differences on four IPI scales, Treatment Programs (TP), Anxiety (AN), Phobic Personality (PH) and Depression (DE). At 18 months, the Duncan tests showed a difference on the IPI Undue Suspiciousness (US) scale. At 6 months only, Duncan tests on

the CPI scales showed a significant difference on the Well-Being (Wb) scale. There were no significant differences found between the two groups on the MMPI.

Only information that is different from information gathered in the pre-employment setting would yield significant differences between these groups. In this study, the IPI documented personality characteristics relevant to the police occupation that were not fully measured by other available tools. Since only the IPI showed differences at both 6 and 18 months, this test shows promise for increasing the power of hiring decisions.

### **A Redundancy Analysis for the Inwald Personality Inventory and the MMPI**

Elizabeth Shusman

Published in: *Journal of Personality Assessment*, 1987,  
51(3), 433-440.

A redundancy analysis between two psychological preemployment screening inventories was conducted with 2,438 male correction officer candidates. One canonical variate accounted for the majority of overlapping variance. When cross-validated, redundancy indices were .17 for the Inwald Personality Inventory (IPI) and .15 for the Minnesota Multiphasic Personality Inventory (MMPI). Three areas of overlap—control over actions, external control, and restlessness—were suggested. Less pathological behavioral patterns predictive of future job performance appeared measured only by the IPI. These results, combined with results from predictive validity studies, provide evidence that pathology is not sufficient for identifying "high risk" candidates.

### **The IPI and MMPI as Predictors of Academy Performance for Police Recruits**

Robin E. Inwald & Elizabeth J. Shusman

Published in: *Journal of Police Science and  
Administration*, 1984, 12(1) 1-11.

The IPI and MMPI were administered to a group of 329 police officer candidates. Performance measures were obtained on nine criteria (lateness, absence, injuries on the job, derelictions, times on restricted duty, negative reports, positive reports, supervisory ratings and final ratings). Results showed that IPI scales measuring "acting out" behaviors (such as "Trouble with the Law/Society", "Job Difficulties" and "Drugs") best predicted negative behaviors on eight job performance measures. The IPI was found to be a more effective predictor of eventual performance than the MMPI

on all nine criteria. For example, the IPI yielded 82% overall correct classifications of absence, while the MMPI produced 69% overall correct classifications. However, in some cases, a combination of the two tests yielded higher overall correct classifications than the IPI alone (the IPI and MMPI yielded 85% overall correct classifications of absence). The utility of psychological testing in the public safety area was discussed.

### **Correction Officer Job Performance as Predicted by the IPI and MMPI. A Validation and Cross-Validation Study**

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Elizabeth J. Shusman, Robin E. Inwald,  
& Beth Landa

*Published in: Criminal Justice and Behavior, 1984, 11(3), 309-329.*

The predictive validity of two psychological inventories, the MMPI and the IPI, was examined for 716 male correction officer recruits for retention or termination as well as incidence of absence, lateness, and formal disciplinary interviews. Discriminant function equations developed from IPI scales correctly classified a greater percentage of officers as to "positive" or "negative" job performance than did prediction equations developed from the MMPI scales. Mean scores on IPI scales indicating past adjustment difficulties and "acting out" behaviors were higher for officers exhibiting "negative" job behaviors. A cross-validation analysis of three on-job performance criteria was then conducted. Prediction equations for absence, lateness, and disciplinary interviews, developed on a random analysis sample of 400 officers, were then applied to a new cross-validation sample of 265 officers. On both the analysis and cross-validation samples, the IPI more accurately classified individuals as to absences and disciplinary interviews than did the MMPI; lateness was predicted equally well by both tests.

### **A Longitudinal Validation Study of Correction Officer Job Performance as Predicted by the IPI and MMPI**

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Elizabeth J. Shusman & Robin E. Inwald

*Published in: Journal of Criminal Justice, 1991, 19(2), 173-180.*

The long-term validities of two psychological inventories, the Minnesota Multiphasic Personality Inventory (MMPI) and the Inwald Personality Inventory (IPI), were

examined for 246 male correction officers employed for an average of three-and-one-half years. Each officer had previously completed both testing instruments as part of the agency's pre-employment screening program. Data on absences, latenesses, and disciplinary interviews were collected from supervisory reports. Discriminant function equations developed from IPI scales alone correctly classified a greater percentage of officers as to "positive" or "negative" job performance behavior than did equations developed from the MMPI scales alone. When all IPI and MMPI scales were used in the prediction equations, the greatest percentage of officers were correctly classified. The significance of these longitudinal research results are discussed and areas of further research are suggested.

### **Role of IPI and MMPI as Predictors of Correction Officer Job Performance by Race**

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Elizabeth J. Shusman & Robin E. Inwald

*Presented at the Annual Meeting of the American Psychological Association (August, 1983, Anaheim, CA)*

The predictive validity of two psychological inventories used in a pre-employment screening program, the Minnesota Multiphasic Personality Inventory (MMPI) and the Inwald Personality Inventory (IPI), were examined separately for 309 white, 256 black, and 136 hispanic male correction officer recruits. Data were collected from supervisory reports on retention or termination, and incidence of absence, lateness, and formal disciplinary interviews for each recruit during a ten-month probationary period. Discriminant function analyses revealed that the inventories are successful predictors of job performance for each race. Scales measuring interpersonal difficulties and risk-taking identified officers with "negative" job behaviors for all races studied.

### **Seven-Year Follow-Up of Officer Terminations Predicted by Psychological Testing**

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Robin E. Inwald & Hilary F. Knatz

*Presented at the Annual Meeting of the American Psychological Association (August, 1988, Atlanta, GA)*

The power of psychological screening methods to predict terminations of public safety officers was examined for 1,214 female and 3,728 male officers hired by a large urban public safety agency between 1980 and 1985. Candidates completed the Inwald Personality Inventory (IPI), Minnesota Multiphasic Personality Inventory (MMPI), California Psychological Inventory (CPI), as well as a clinical

interview prior to appointment. Discriminant function analyses for nine psychological screening predictors indicated that the IPI was the most accurate predictor of termination that had the least number of false positives. A combination of IPI and MMPI scores identified the greatest percentage of terminated officers. It was concluded that while valid psychological testing can identify "high risk" candidates, a point of diminishing returns exists where larger percentages of suitable applicants are "sacrificed" to screen out the "high risks". The implications for public safety hiring were discussed and recommendations for hiring policies were made.

### **A Comparison of the Inwald Personality Inventory (IPI) Scores of Police Recruit Applicants With and Without A History of Psychiatric Disturbance**

Paul Mesnick, MD, Eric Ostrov, JD., PhD., &  
James L. Cavanaugh, MD

*Presented at the American Academy of Forensic Sciences  
(1988, Philadelphia, PA)*

The IPI is a widely used instrument for psychologically screening police recruit candidates. This paper examines the concurrent validity of the IPI. Specifically, it evaluates whether the IPI can discriminate applicants with a history of psychiatric illness or substance abuse from applicants without such a history.

Since January, 1986, the Chicago PD Medical Services Section has evaluated over 3335 police recruit candidates. These candidates also were assessed psychologically using the IPI. Independent of the IPI, candidates are required to detail their medical history, including any treatment for psychiatric conditions including substance abuse. If there are indications of a significant psychiatric history then corresponding records, if any, are obtained and reviewed by the Chief Police Surgeon (Dr. Mesnick).

The review of records showed that 26 candidates had a history of significant psychiatric illness or drug abuse. To test the validity of the IPI, 26 applicants who were not disturbed by history were matched for gender, race, and age with the applicants who were disturbed by history.

Results show that the disturbed applicant group was significantly more likely to have unacceptable IPI scores than the controls. Results confirmed the usefulness of the IPI in identifying potentially problematic police recruits.

### **Predicting the Performance of Private Security Personnel with the IS3 & HPP/SQ**

Robin E. Inwald, Ph.D. & Judith C. Kaufman

*Hilson Research, Inc. 1991*

A total of 121 security officer candidates completed the Inwald Personality Inventory - Short Version 3 (IS3) and the Hilson Personnel Profile/Success Quotient (HPP/SQ). Three months after they were hired, performance ratings were obtained from the supervisors of 81 of the employees. Criteria included job status, overall performance ratings, and ratings regarding the presence or absence of the "work ethic". Absence and lateness records were also obtained. Discriminant function analysis was applied to the IS3 and the HPP/SQ scales, alone and then together, in order to assess the predictive abilities of the tests.

For all criteria measured except lateness, a combination of the two tests produced the highest number of overall correct classifications. In both analyses where "exceptional" performers were compared with all others, the HPP/SQ alone produced a higher number of correct classifications when compared with the IS3. In three out of five analyses where "unsatisfactory" performers were compared with all others, the IS3 had the higher number of correct classifications.

In a comparison of those still working on the job and those who resigned but would be allowed to return ("satisfactory" performers) with those who resigned but would not be rehired and those who were officially terminated ("unsatisfactory" performers), the combination of the IS3 and the HPP/SQ yielded the highest number of correct classifications (75.7%, or 53 out of 70 individuals). The two tests used together also identified a higher percentage of those who were "unsatisfactory" (71.4%, or 20 out of 28 individuals) than either test alone. However, it should be noted that the lower "cost" (18.2%, or 8 out of 44 individuals) was obtained using the IS3 alone (i.e. 8 of those individuals who were "satisfactory" would be incorrectly classified as "unsatisfactory" by the test).

When officers who received an overall performance rating of "exceptional" were compared with all others, the IS3 and HPP/SQ together produced the highest number of overall correct classifications (86.4%, or 51 out of 59 individuals). The HPP/SQ alone identified 92.9% (13 out of 14) of those who were rated "exceptional". This was accompanied by a "cost" of 28.9%, or 13 out of 45 individuals (i.e. 28.9% of those who were not "exceptional" would be incorrectly classified as "exceptional" by the tests).

The IS3 produced the most accurate prediction of documented lateness. It correctly identified 81% (17 out of 21) of those who were late more than twice, while the HPP/SQ

correctly identified 71.4% (15 out of 21) of those same individuals. The IS3 equation also produced the lowest percentage of incorrect predictions, 11.9%, or 5 out of 42 officers.

In summary, it should be noted that these results are consistent with other predictive studies using these tests in the public safety/security fields.

### **The Use of the MMPI and IPI in Police and Correctional Officer Selection**

Tracy Griffith & Earl Griffith

#### *Dissertation Abstract*

Two objective personality inventories, the Minnesota Multiphasic Personality Inventory (MMPI) and the Inwald Personality Inventory (IPI), were administered to 480 male and female police and correctional officer applicants during a two year period. Follow-up performance data, providing information on employment status and disciplinary infractions, were collected on those officers hired by the four Southeast Florida agencies which participated in this study. Based on the performance data collected, officers were placed into one of five groups for a series of ANOVA analyses. Three discriminant function analyses were then conducted to determine the predictability of the MMPI, the IPI, and the two combined inventories. Consistent with previous research, the IPI was able to predict successful officers slightly better than the MMPI (73% vs. 69%), while the two combined were able to predict with 77% accuracy. Significantly, the IPI was more accurate in minimizing predicted successful officers who were, in fact, unsuccessful.

### **Internal Consistency and Predictive Validity of the Inwald Personality Inventory**

Elizabeth J. Shusman & Robin E. Inwald

#### *Submitted for Publication*

The original 26 scales of the IPI were combined and item overlap was removed to form twelve lengthier scales with the intent of increasing internal reliability and raising the ceiling on the possible magnitude of validity coefficients. KR20 estimates on the original and revised versions were calculated on 687 female and 1,593 male police officer candidates. Reliability did not increase to any meaningful degree. Several possible explanations are discussed. Validation (n=386) and cross-validation samples (n=293) were randomly selected from a different sample of male correc-

tion officers. Validity coefficients on all performance criteria studied (absences, latenesses, and disciplinary interviews) were greater for the 26 scale IPI version than for the twelve scale version. On cross-validation, equations based on 12 new IPI scales failed to improve prediction of candidates who later showed job difficulties when compared with predictions based on the original test. Predictions for the "poor" performance category made by the original IPI were up to 41% more accurate than predictions made without benefit of psychological and biographical information gathered in a pre-employment setting.

### **IPI and HPP/SQ Predictions of Peer Ratings and Class Standing**

Robin E. Inwald, Ph.D. and Judith C. Kaufman

*Hilson Research, Inc. 1991*

A total of 33 police officers in a state police department completed the Hilson Personnel Profile/Success Quotient (HPP/SQ). Of these 33 individuals, 29 had also completed the Inwald Personality Inventory (IPI) as one of their pre-employment screening requirements 7 to 15 months earlier. Approximately one month after the HPP/SQ was administered, measures of academy performance were obtained, including peer ratings classified as either "negative" (those given by officers to peers they would "least like to work with") or "positive" (those given by officers to peers they would "most like to work with"), overall peer ratings on a number of measures, and an external measure of class standing.

Discriminant function analyses were applied to the scales of the IPI and HPP/SQ. In five out of six analyses conducted, the combination of the two tests yielded 100% overall prediction accuracy. In the sixth analysis, the combination of the IPI and HPP/SQ yielded 96.6% overall predictive accuracy.

The IPI alone yielded higher overall predictions than did the HPP/SQ alone for five of six analyses. In four of the six analyses presented here, the IPI yielded over 88% correct predictions overall. For the same four analyses, the IPI identified all those targeted for analysis. Misclassification rates for all six IPI analyses ranged from 0% to 30.0%.

In five of the six analyses conducted, the HPP/SQ yielded over 70% correct predictions overall. In three out of six analyses, the HPP/SQ identified 80% or more of those targeted for analysis. Rates of misclassification for all six HPP/SQ analyses ranged from 22.7% to 36.4%.

It appeared that, in general, the two tests used together increased prediction accuracy as compared with individual test results. The IPI alone predicted poor performance more

accurately than did the HPP/SQ when used alone. However, the HPP/SQ outperformed the IPI when identifying those performing in the top third on overall peer ratings.

The sample size here may be responsible for an increase in classification accuracy due to the ability of customized prediction equations to capitalize on idiosyncrasies of a small sample. Nevertheless, the results here are consistent with other research in the public safety/private security fields. The consistency of these results adds to the established research base of the IPI and HPP/SQ for predicting officer performance in the public safety field.

### **Role of a Personality Screening Measure to Identify On-Job Behavior Problems of Correction Officer Recruits**

Robin E. Inwald & Stephan R. Sakales

*Presented at the American Psychological Association Convention (August 1982, Washington, DC)*

In investigating the predictive validity of a psychological screening instrument developed for use with law enforcement officers (the IPI), a study of the performance of 175 male correction officers was conducted. Prior to recruitment, this instrument was administered to all officers, and data were subsequently obtained for the first ten months of service regarding absence, lateness and disciplinary interviews. A step-wise discriminant function analysis yielded several significant scales for each criterion. For these officers, scores on the Drug Use (DG) and Trouble with the Law/Society (TL) scales were significant in identifying recruits having three or more separate times absent. Scores on the Job Difficulties (JD) and Unusual Experiences (UE) scales were significant in identifying individuals having three or more separate times late, while scores on the Driving Violations (DV) and Absence Abuse (AA) scales were significant in identifying recruits having one or more disciplinary interviews. Scores on the Phobias (PH), Depression (DE) and Unusual Experiences (UE) scales were significant in identifying those individuals showing job behaviors as measured by none versus some or all of the above criteria. Implications for use of this measure as an aid to law enforcement personnel administrators are discussed and further research, including cross-validation, is suggested.

### **Personality and Performance Sex Differences of Law Enforcement Officer Recruits**

Robin E. Inwald & Elizabeth J. Shusman

*Published in: Journal of Police Science and Administration, 1984, 12(3), 339-347*

This study examined sex differences on the IPI and MMPI raw scale scores. A total of 1,887 male and 520 female correction officer candidates were administered the IPI and MMPI as part of a pre-employment test battery. Results indicated that items measuring "acting out" behavior, coupled with items indicating undue suspiciousness of others, were endorsed with greater frequency by these male public safety officer candidates than by female candidates. Females, on the other hand, tended to admit more often to items measuring anxiety and internal conflicts. Secondly, those male candidates later hired and subsequently terminated were again identified by "acting out" behaviors and suspiciousness, combined with rigid, stereotyped attitudes. Scales that discriminated between successful and unsuccessful officers included Trouble with the Law (TL), Antisocial Attitudes (AS), Undue Suspiciousness (US) and Rigid Type (RT). For females, the Lack of Assertiveness (LA) scale was significantly higher for "successes" than for "failures". Females who scored lower on this scale were more likely to be terminated, suggesting that those terminated may have been more aggressive and/or outspoken than their nonterminated female colleagues.

The trends found here seem to be consistent, both with other research results, and with observed and stereotypical behavior patterns of males and females.

### **IS3 Predictions of Psychologists' Ratings**

Robin E. Inwald & Judith C. Kaufman

*Hilson Research, Inc. 1990*

The IS3 was used to predict psychologists' overall ratings of 392 public safety job applicants. Psychologists used results of the IPI, MMPI, a personal history questionnaire, and a clinical interview to develop their final evaluative ratings of the candidates. The IS3 was administered separately and was not used by the psychologists. In a comparison of those rated "acceptable" with those rated "unacceptable", the IS3 scales independently identified 76.2% of those candidates who would receive an "unacceptable" rating. Of those rated "acceptable" by the psychologist, 16.2% were misclassified as "unacceptable" by the test. The percent of overall correct classifications as to whether a candidate was either "acceptable" or "unacceptable" to the psychologist was 82.1%. T-tests were also

conducted between the scores of "acceptable" and "unacceptable" groups. Those rated "Unacceptable" showed significantly higher scores on the IS3 scales of Alcohol Use (AL), Drug Use (DG), Trouble with the Law/Society (TL), Job Difficulties (JD), Absence Abuse (AA), and Critical Items for Follow-up Evaluation (CI) ( $p < .001$ ). These results indicate that the IS3 was a strong predictor of psychologists' ratings of job applicants. Where full psychological screening programs are unfeasible, the IS3 may provide a cost-effective alternative.

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### Prediction of Police Performance

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Michael Surette

A series of analyses were conducted to assess the relationship between several measures (as well as their sub-scales) and first year police performance. The measures under investigation were the Minnesota Multiphasic Personality Inventory (MMPI), the California Personality Inventory (CPI), the Inwald Personality Inventory (IPI), the Shipley I.Q., Gross Ratings for social history, verbal ability, an interview, and demographic information.

Results indicated that the measures were adequate for screening potential police officers. Based on the results of sample data, the instrument recommended for continued use as a screening instrument, as well as a predictor of police performance, is the Inwald Personality Inventory. The analysis revealed that an individual's score on the IPI was significantly related to his/her first year performance.

### Role of Two Personality Screening Measures to Identify On-Job Behavior Problems of Law Enforcement Officer Recruits

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Robin E. Inwald & Stephan R. Sakaes

*Presented at the American Psychological Association Convention (August 1982, Washington, DC)*

The ability of the Inwald Personality Inventory (IPI) and the Minnesota Multiphasic Personality Inventory (MMPI) to predict job performance for 175 male law enforcement officers was assessed. Prior to recruitment, these instruments were administered to all candidates. Data were obtained for the first ten months of service on criteria of three or more separate times absent, three or more separate times late, and one or more disciplinary interviews. In addition, the criterion of "problems" was developed by comparing those officers who had three or more separate times absent, three or more separate times late, or one or more disciplinary interviews with those officers whose records were clear. A

discriminant function analysis using the scales of the two tests revealed that several scales predicted performance on the criteria variables. Results showed that discriminant function analyses correctly classified 69.14% of officers regarding absence, 76.57% of the officers regarding latenesses, 71.26% of the officers regarding disciplinary interviews, and 69.14% of the officers regarding whether they had any of the above problems ("problem" variable).

In summary, the results of this preliminary research using paper-and-pencil tests to predict officer job performance may aid law enforcement agencies in their efforts to hire responsible employees.

### A Pilot Study for Prediction of Psychological Ratings for Law Enforcement Officers from the IPI

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Elizabeth J. Shusman & Robin E. Inwald

*Hilson Research, Inc. 1984*

A total of 1,976 correction officer candidates completed the Inwald Personality Inventory (IPI), Minnesota Multiphasic Personality Inventory (MMPI), Skil Scale Inventory (SSI) and Law Enforcement Personal History Questionnaire (PHQ) as part of their pre-employment screening requirements. On the basis of test results and a comprehensive one-on-one interview, psychologists assigned an overall psychological risk rating to each candidate. Ratings were on a scale of "1" (no psychological concerns at this time) to "5" (very serious concerns at this time - do not recommend).

Results indicated that psychologists' ratings were useful in predicting future termination of hired officers. Compared to the officers who received ratings of "1" or "2", the "3"'s were twice as likely to be terminated from the agency and the "4"'s and "5"'s were three times more likely to be fired.

Discriminant function equations were developed to assess the ability of the IPI to predict psychologists' ratings. The sample of 906 males was randomly divided into validation ( $n=529$ ) and cross-validation ( $n=377$ ) groups. For 71% of the officers, the equation developed on the validation sample correctly predicted the rating the psychologist had originally assigned to the candidate. When the equations were applied to the second sample, 71% of the predicted psychological ratings were accurate.

The authors concluded that the IPI scales appeared to contain information on personality characteristics and behavioral patterns deemed important by psychologists when assigning psychological ratings to law enforcement candidates.

## Validation of the IPI and MMPI as Predictors of Police Performance

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Mary L. Doherty, Jose M. Cortina, Neal Schmitt,  
Gary Kaufman, & Richard Smith

Abstract by Robin E. Inwald

A total of 314 state police recruits were administered the Inwald Personality Inventory (IPI) and Minnesota Multiphasic Personality Inventory (MMPI) soon after entering the state police training academy. The tests were then examined for their ability to predict police recruit performance. Researchers found that the IPI "risk rating" (or "Prediction of Performance Rating Provided by Psychologists" reported on the IPI) was "a better predictor of turnover than any of the IPI or MMPI composite predictors." The authors stated that "optimal prediction of peer ratings might involve use of both the IPI and MMPI inventories".

Using the "risk rating", it was also found that if the IPI had been used to screen out those classified as "high" risk by the predictor, there would have been a 5% overall reduction in turnover. Finally, the authors stated that "the conclusion derived from differential prediction analyses was that differences in race on the IPI were reflected in actual turnover and training performance. Hence, using the IPI would be fair to members of minority and majority groups using the Cleary definition of test fairness (Uniform Guidelines, 1978).

## Officer Supervisory Ratings Classifications

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Robin E. Inwald, Catherine L. Flanagan, &  
Judith C. Kaufman

*Hilson Research, Inc. 1991*

A total of 95 officers from a state police department completed the Inwald Personality Inventory (IPI) and the Minnesota Multiphasic Personality Inventory (MMPI) as part of their preemployment screening requirements. In a range of six months to two years after the tests were administered, performance ratings concerning general attitude, desirable qualities of officers (such as confidence, cooperation, and honesty) and an overall measure of performance were obtained from the supervisors of these officers. Discriminant function analyses were applied to the scales of the IPI and MMPI.

The combination of the IPI and MMPI yielded the highest overall performance classifications, misclassified fewer officers as to performance ratings, and yielded higher canonical correlation coefficients when compared with either the IPI or MMPI alone.

The IPI alone yielded higher overall correct classifications than did the MMPI alone for all four analyses. It consistently identified more of those targeted for analysis, yielded higher canonical correlation coefficients, and, in three out of four analyses, misclassified fewer officers.